Outcomes of a Tailored Tobacco Treatment Approach for Individuals with Substance Use Disorders and/or Psychiatric Disorders

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Acknowledgements

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Global Annual Death from tobacco-related illness, 2003

- Canada: 45,000
- USA: 440,000
- South America: 221,000
- Africa: 158,000
- Russia: 330,000
- China: 800,000
- South-East Asia: 1,035,000
- Taiwan: 19,000
- Australia: 18,700
- China: 800,000

Wen, Ching Pan (2003). The Taiwan Tobacco Atlas, United medical Foundation, National Health Research Institutes

Estimated tobacco-related deaths:
- 2005: 5.4 million
- 2015: 6.4 million
- 2030: 8.3 million

Prevalence of Current Smoking in Canada (age 15+)

<table>
<thead>
<tr>
<th>Province</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.C.</td>
<td>15%</td>
</tr>
<tr>
<td>Ontario</td>
<td>15%</td>
</tr>
<tr>
<td>Québec</td>
<td>21%</td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>21%</td>
</tr>
<tr>
<td>Alberta</td>
<td>18%</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>22%</td>
</tr>
<tr>
<td>Manitoba</td>
<td>19%</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>21%</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>20%</td>
</tr>
</tbody>
</table>

Total: 18.0%
Male: 19.2%
Female: 15.9%

What’s in a Cigarette?

Tobacco smoke: ≥ 4000 chemicals\(^1\), ≥ 50 carcinogenic\(^2\)

Smoking cigarettes with lower tar and nicotine provides no health benefit.\(^2\)

**Smoking-Attributable Causes of Death**

#1 Lung cancer  
#2 Ischemic heart disease  
#3 Chronic airways obstruction

### Cancers
- Lung, Lip, Oral cavity/pharynx  
- Esophagus, Larynx, trachea  
- Cervix uteri, Urinary bladder  
- Stomach, Colon  
- Leukemia, Pancreas  
- Kidney, Liver  
- Other urinary

### Cardiovascular disease
- Ischemic heart disease  
- Cerebrovascular disease  
- Rheumatic heart disease  
- Atherosclerosis  
- Hypertension  
- Aortic aneurysm  
- Pulmonary heart disease  
- Other arterial disease

### Respiratory disease
- Chronic airways obstruction  
- Asthma  
- Bronchitis/emphysema  
- Pneumonia/influenza  
- Respiratory tuberculosis

### Paediatric disease
- Low birth weight  
- Respiratory conditions-newborn  
- Respiratory distress syndrome  
- Sudden Infant Death Syndrome

### Reproductive Problems
- Reduced fertility  
- Spontaneous Abortion  
- Placental abruption

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Nearly 70%-90% of individuals in drug treatment programs concurrently use tobacco (Best et al, 1998; Clark et al, 2001)
Arguments for Not Providing Tobacco Treatment....

- “these patients don’t want to quit”

- “these patients will relapse if they try to quit”

- “these patients have more important issues in their lives ....they should just be allowed to smoke…”

- “these patients are unable to quit”
Patients Receiving Substance Use and Psychiatric Treatment Want To Quit…..

• Most smokers (80%) in a MMT population were “somewhat” or “very” interested in quitting.

• In an outpatient program for “alcohol abusers”, more than 75% were willing to consider stopping smoking.

• In a review of 9 studies assessing motivation to quit smoking, more than 50% of all smokers with a psychiatric disorder are contemplating to quit smoking in the next 6 months or 30 days.

Richter KP et al. (2001) Tobacco Use and Quit Attempts Amongst Methadone Clients. AJPH
Smoking Cessation Does Not Impair Addiction Treatment But may affect Psychiatric illness ....

- Smoking cessation efforts delivered during addictions treatment appeared to ENHANCE rather than compromise long term sobriety.

- However, smoking cessation is associated with increased risk of depressive episodes among individuals with Major Depression.

- May result in adverse drug reaction due to increased available serum levels of antipsychotics (previously lowered by smoking).

Earlier meta-analysis (n = 19 studies) addressing smoking cessation among individuals in addiction treatment and recovery found:

- Increased cessation at end of 12 weeks treatment (BUT NO SIGNIFICANT EFFECT AT 6 MONTHS!)

Recent study found end-of-treatment smoking cessation rates of 24% vs 19% for individuals with schizophrenia vs. those without psychosis (but with another psychiatric disorder)

- Longer duration of treatment a significant predictor of successful cessation.

Selby et al. (2010). Individualized smoking cessation treatment in an outpatient setting: Predictors of outcome in a sample with psychiatric and addictions co-morbidity. Addictive Behaviors, 35(9):811-7
Quitting smoking is a process and not an event
**Program Description**

- The Tobacco Dependence Clinic (TDC) is a program that provides behavioural counselling and up to 26 weeks of no-cost pharmacotherapy for clients through VCH Mental Health & Addiction Services.

- Program is run with a team of nurses, counsellors, respiratory therapists, and a physician.

- Currently in 7 locations:
  - Pacific Spirit Community Health Centre
  - Raven Song Community Health Centre
  - Three Bridges Community Health Centre
  - Downtown Community Health Centre
  - Pender Community Health Centre
  - Centre for Concurrent Disorders
  - Rainier Hotel
**Intake**

**Eligibility:**
- 19 years or older
- Tobacco dependent
- Have a history of substance use disorder (SUD) and/or psychiatric disorder (PD)
- Financially disadvantaged

**Assessment:**
- 1 hour evaluation of medical, psychiatric, substance and tobacco use history
- Expired air CO is determined and a treatment plan is developed in consultation with client
Phases of Treatment

Behavioral Counseling - Tailored Pharmacotherapy (8 Weeks)

Support Group - Tailored Pharmacotherapy (Up to 26 Weeks)
Behavioural Counseling (Weeks 1-8)

- **Phase 1**: engagement in the process – weeks 1-2
- **Phase 2**: planning for change – weeks 3-4
- **Phase 3**: sustaining change – weeks 5-8
Combination Pharmacotherapy

Nicotine Replacement Therapy
- Patch
- Gum
- Lozenge
- Inhaler

Oral Medications
- Zyban
- Champix

Promoting wellness. Ensuring care.
Outcome Evaluation

Smoking Cessation

Vancouver Coastal Health
TDC Clinics

Pacific Spirit, Sept, 2007

Three Bridges, March, 2008

Downtown Community Health Centre, Sept, 2008

Raven Song, Sept, 2010
TDC sites contd

Pender Clinic, Sept, 2010

Centre for Concurrent Disorders, Feb, 2011

Ranier Hotel, March, 2011
Substance Use Disorder & Psychiatric Disorder History (N = 739)

- None: 22.6%
- Anxiety: 14.7%
- Psychotic: 6.5%
- Mood: 56.2%

Bar chart showing the percentage of people with substance use disorder history:
- None: 11.1%
- Alcohol: 35.0%
- Heroin: 10.1%
- Cocaine: 25.8%
- Marijuana: 13.7%
- Metamphetamine: 4.2%
Co-occurring Disorders history (either past or current, N = 739)

- Both (n = 511): 69.1%
- Substance Use only (n = 146): 19.8%
- Psychiatric only (n = 57): 7.7%
- None (n = 25): 3.4%
### Sample Characteristics (N = 739)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Stand. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of participant (years)</td>
<td>47.2</td>
<td>11.4</td>
</tr>
<tr>
<td>Age at smoking initiation (years)</td>
<td>14.9</td>
<td>5.2</td>
</tr>
<tr>
<td>Importance of quitting (scale of 0 ‘low’ to 10 ‘high’)</td>
<td>9.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Confidence in quitting (scale of 0 ‘low’ to 10 ‘high’)</td>
<td>7.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Number of cigarettes smoked per day</td>
<td>20.6</td>
<td>10.8</td>
</tr>
<tr>
<td>Fagerstrom Test for Nicotine Dependence (scale of 0 ‘low’ to 10 ‘high’)</td>
<td>6.0</td>
<td>2.1</td>
</tr>
<tr>
<td>CO level at baseline (ppm)</td>
<td>20.1</td>
<td>12.4</td>
</tr>
</tbody>
</table>
Sample for Outcomes Assessment

739
Completed intake and orientation
(Sept 2007 to March 2011)

739

240
• Not engaged in the program (i.e., had two or less contacts with the program)
• No gender reported

540
Intent to treat

139
Program non-completers

406
Program completers

Smoking cessation: 7-day point-prevalence of abstinence at end of treatment (i.e., anytime between 8 weeks to 26 weeks) verified by expired CO levels
Program Completion (n = 406/540)

Completed program?

- Yes: 75%
- No: 25%
Smoking Cessation* Outcomes at end-of-treatment

Intent-to-treat (N = 540)
- Quit: 30.9%
- Not quit: 69.1%

Program completers (n = 406)
- Quit: 41.1%
- Not quit: 58.9%

*Smoking cessation: at end-of-treatment (i.e., anytime between 8 weeks to 26 weeks) verified by expired CO levels
Smoking cessation by SUD and PD among program completers (n = 406)*

* No statistically significant differences between groups
Smoking cessation by Co-occurring Disorder history (among program completers, n = 406)*

- Neither (n = 16): 43.8%
- Psychiatric disorder only (n = 35): 45.7%
- Substance use disorder only (n = 75): 46.7%
- Co-occurring (n = 280): 38.9%

* No statistically significant differences between groups
Smoking cessation by length of stay in the program among program completers (n = 406)*

* Statistically significant differences between groups
## Multivariate predictors\(^a\) of smoking cessation at end of treatment (i.e., within 26 weeks) (n = 373)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History of Psychiatric Disorder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (reference)</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Mood disorder</td>
<td>.74</td>
<td>.40-1.36</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>.42(^*)</td>
<td>.19-.93</td>
</tr>
<tr>
<td>Psychotic disorder</td>
<td>.88</td>
<td>.33-2.38</td>
</tr>
<tr>
<td><strong>CO level at baseline</strong></td>
<td>.98(^*)</td>
<td>.96-1.00</td>
</tr>
<tr>
<td><strong>Number of Visits to the TDC</strong></td>
<td>1.10(^***)</td>
<td>1.06-1.14</td>
</tr>
</tbody>
</table>

\(^a\) Only variables which were significantly predictive of smoking cessation in the final multivariate model are shown.

\(* = p <.05\), \(** = p <.001\), \(*** = p <.001\)
Summary of Key Findings

• **Smoking abstinence at end of program:**
  - Intent to treat analysis: 31% (167/540)
  - Among program completers: 41% (167/406)

• **Significant predictors of abstinence:**
  - Having a history of an anxiety disorder is predictive of being **less** likely to quit smoking when compared to having no history of a psychiatric disorder.
  - Having a lower CO level at program enrolment was a significant predictor of being **more** likely to quit.
  - Attending the TDC program for a longer duration was a significant predictor of being **more** likely to quit.
Conclusions

• The Tobacco Dependence Clinic provides an innovative model of tailored tobacco dependence treatment which combines behavioural counselling with no-cost NRT for individuals with a history of substance use and/or psychiatric disorders.

• With intensive tobacco dependence treatment provided within addictions services, individuals with a history of substance use and/or psychiatric disorders are able to achieve smoking abstinence.
The Tobacco-Dependence Clinic: Intensive Tobacco-Dependence Treatment in an Addiction Services Outpatient Setting

Milan Khara, MBChB, CCFP, ABAM,\textsuperscript{1,2} Chizimuzo T.C. Okoli, PhD, MPH\textsuperscript{2,3}

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\textsuperscript{2}University of British Columbia, Vancouver, British Columbia, Canada
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We present outcomes from an intensive tobacco-dependence treatment program for addiction services clients at three different sites. Data from 202 participants were analyzed. For individuals who completed the program, the abstinence rate was 43%. Not having a primary substance use history and a lower carbon monoxide (CO) level at intake predicted abstinence; whereas being female, the particular site of intervention, receiving both nicotine replacement therapy (NRT) and oral medication, and having a lower CO level at baseline predicted program completion. Drug treatment clients can successfully quit smoking at rates similar to the general population when given access to intensive tobacco-dependence treatment. (Am J Addict 2010;00: 1–11)

Given that tobacco use remains the number one preventable cause of morbidity and mortality in Canada,\textsuperscript{7} with alcohol, tobacco, and illicit drug use contributing to 3.1%, 16.5%, and .4%, respectively, of total mortality in Canada\textsuperscript{8}, the high rates of tobacco use among individuals with substance use disorders suggests an increased risk for tobacco-related mortality and morbidity in these populations.

Moreover, several studies have documented the benefits of smoking cessation among individuals with concurrent substance use disorders\textsuperscript{9,10} such as improved quality of life\textsuperscript{11} and drug abstinence\textsuperscript{12–14}. Recent reviews of the lit-
Short Communication

Sex differences in smoking cessation outcomes of a tailored program for individuals with substance use disorders and mental illness

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Smoking cessation
Substance use disorders
Mental illness
Addiction treatment

ABSTRACT

Tobacco use is highly prevalent among individuals with a history of substance use disorders (SUD) and/or mental illness (MI). Despite evidence of differences in smoking cessation (SC) outcomes between women and men, few studies have formally evaluated sex differences among SUD and/or MI populations. For 258 participants (62% male, mean age = 48.6 years) with an SUD and/or MI enrolled in a tobacco dependence clinic (TDC) program, we examined SC outcomes and compared men’s and women’s predictors of end-of-treatment abstinence. Individuals with an MI, social support for quitting, and a greater number of visits to the TDC program were more likely to be female; whereas males were characterized by having an SUD, older age,